

Claims:

1. A process for recovery of plant sterols and tocopherols from deodorization distillates formed during chemical or physical refining of vegetable oils, by distillation or saponification of the components present, characterised in that
 - i) free fatty acids are removed from the deodorization distillate by vacuum distillation or by continuous solvent saponification,
 - ii) after the removal of free fatty acids, the received material consisting of sterols, tocopherols, hydrocarbons, mono-, di- and triglycerides as main components is reacted with an aromatic carboxylic acid anhydride having at least 7 carbon atoms at a temperature of 50-150°C, under reduced pressure during 0.5-2 hours,
 - iii) after the treatment with anhydride, tocopherols are removed from the mixture applying short-path distillation,
 - iv) crystalline free sterols are recovered from the distillation residue containing sterol esters, di- and triglycerides by transesterification.
2. The process according to claim 1 characterized in that the raw material is a deodorization distillate received during refining of sunflower, rapeseed, soybean and corn oil.

3. The process according to claim 1i) characterized in that the free fatty acids are distilled in a distillation column or in a film evaporator at a pressure of 0.1-8 mbar at temperatures ranging from 180 to 250°C.
4. The process according to claim 1i) wherein the free fatty acids are saponified in a medium of polar/apolar solvents at 10-40°C temperature, during 0.5-5 minutes in presence of a slight excess of alkali, and the free fatty acids are removed by separating the polar phase.
5. The process according to claim 1ii) characterized in that benzoic, benzyl, phenoxyacetic, phthalic, substituted phthalic acid anhydride is applied as carboxylic acid anhydride.
6. The process according to claim 1ii) and 5 characterized in that the anhydrides are applied in an excess limited to 5 mol% over the amount of sterols determined by gas chromatographic analysis.
7. The process according to claim 1iii) characterized in that the short-path distillation of tocopherols is performed at 0.01-0.1 bar pressure applying 200-260°C temperature.
8. The process according to claim 1iv) characterized in that the sterols are recovered from the 20-60 weight% sterol-ester containing residue of tocopherol distillation, applying

transesterification, preferably in presence of sodium methylate catalyst.

9. The process according to claim 8 characterized in that during said transesterification of sterol esters, the distillation residue rich in sterol esters is added continuously to the refluxed sodium methylate solution and the reaction is made complete within 2-4 hours.
10. Use of crystalline plant sterols obtained by a process claimed in any of claims 1-9 for pharmaceutical, cosmetic or food industrial purposes.